

Claims

1. Combined demultiplexer and interpolator, **characterized** in that it receives a time multiplex of N signals and in that it generates N channels at 1/D times the speed of the time multiplex, where D is an integer divider of N.
5
2. Combined demultiplexer and interpolator according to claim 1, **characterized** in that it receives a four signal time multiplex and in that it generates four channels at half the speed of the time multiplex.
10
3. Differential phase detector for generating a tracking error signal from the digitized signals (A, B, C, D) of four photodetectors, including a multiplexer for time multiplexing the digitized signals (A, B, C, D), **characterized** in that it includes a demultiplexer / interpolator for synchronizing the samples from the time multiplexed digitized signals (A, B, C, D).
15
4. Differential phase detector according to claim 3, **characterized** in that it includes summing means for summing the synchronized samples of the demultiplexer / interpolator to generate a data signal (HF).
20
5. Differential phase detector according to claim 3 or 4, **further** including means for compensating an attenuation of high signal frequencies caused by the interpolation.
25
6. Differential phase detector according to one of claims 3 to 5, **characterized** in that the demultiplexer /interpolator receives a time multiplex of N signals and in that it generates N channels at 1/D times the speed of the time multiplex, where D is an integer divider of N.
30

7. Differential phase detector according to claim 6,
characterized in that the demultiplexer /interpolator receives
a four signal time multiplex and in that it generates four
channels at half the speed of the time multiplex.

5

8. Method for combined demultiplexing and interpolating,
including the steps of:

- receiving a time multiplex of N signals, and
- generating N channels at 1/D times the speed of the time
multiplex, where D is an integer divider of N.

10

9. Method for differential phase detection, **including** the steps
of:

- digitizing the output signals (A, B, C and D) of four
photodetectors,
- time multiplexing the digitized signals (A, B, C, D),
- synchronizing the samples from the time multiplexed digitized
signals (A, B, C, D) with a demultiplexer / interpolator, and
- generating a tracking error signal from the digitized and
synchronized signals (A, B, C, D)

20

10. Apparatus for reading from and/or writing to optical
recording media, **characterized** in that it includes a
differential phase detector according to one of claims 3 to 7
25 or performs a method according to claim 9 for differential
phase detection.